

CLAIMS:

1. A synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus comprising:
- first and second data ports each arranged to receive a first data signal carried on a respective first and second transmission path;
- a path selection module, co-operable with each of said first and second data ports and arranged to select one or other of said first and second transmission paths;
- a third data port, co-operable with the path selection module to output data received on the selected one of said first and second transmission paths,
- the third data port being arranged to receive a second data signal on a respective transmission path and to communicate said second data signal to each of said first and second data ports for output thereby; and

a message encoding module, arranged to determine which of
said first and second transmission paths is selected, and
being co-operable with said second data signal
transmission path to adjust at least one of the pointer
5 bits associated therewith to indicate said path selection,

each of said first and second data ports being co-operable
with the second data signal transmission path to determine
the setting of said at least one pointer bit and thereby
10 to determine which of the first and second data paths is
selected.

2. An apparatus as claimed in Claim 1, wherein said
pointer bits include new data flag (NDF) bits, said
15 message encoder module being arranged to adjust one or
more of said new data flag (NDF) bits.

3. An apparatus as claimed in Claim 1, wherein the
apparatus is arranged to generate new pointer bits to
20 adapt the second data signal to the local timing of the
apparatus, the message encoder module being arranged to
adjust at least one pointer bit of said generated new
pointer bits.

25 4. An apparatus as claimed in Claim 1, wherein the
apparatus is arranged to generate new pointer bits to
adapt the second data signal to the local timing of the
apparatus, the adjustment of said at least one pointer bit

being effected during the generation of said new pointer bits.

5. A data port for synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the data port being arranged to receive a first data signal from a selected one of a first and a second transmission path, and being further arranged to receive a second data signal on a respective transmission path, the data port including a message encoding module, arranged to determine which of said first and second transmission paths is selected, and being co-operable with said second data signal transmission path to adjust at least one of the pointer bits associated therewith to indicate said path selection.

6. In a synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus comprising first and second data ports each

arranged to receive a first data signal carried on a
respective first and second transmission path; a path
selection module, co-operable with each of said first and
second data ports and arranged to select one or other of
5 said first and second transmission paths; a third data
port, co-operable with the path selection module to output
data received on the selected one of said first and second
transmission paths, the third data port being arranged to
receive a second data signal on a respective transmission
10 path and to communicate said second data signal to each of
said first and second data ports for output thereby, a
message signalling method comprising

determining which of said first and second transmission
15 paths is selected;

adjusting, at said third data port, at least one of the
pointer bits associated with said second data signal path
to indicate said path selection;

20 determining, at each of said first and second data ports,
the setting of said at least one pointer bit thereby to
determine which of the first and second data paths is
selected.

25 7. A method as claimed in claim 6, wherein said pointer
bits include new data flag (NDF) bits, the method
including adjusting at least one new data flag (NDF) bit
to indicate said path selection.

8. A synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being
5 arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus including two data ports, one of said data ports
10 being arranged to receive a first data signal on a respective data path, the other data port being arranged to receive a second data signal on a respective data path, said one data port being arranged to communicate said first data signal to said other data port, said other data
15 port being arranged to communicate said second data signal to said one data port, wherein in order to communicate a message relating to said first data signal from said other data port to said one data port, said other data port is arranged to embed said message in one or more pointer bits
20 associated with the path of said second data signal, said one data port being arranged to determine said message by examining said one or more pointer bits.

9. An apparatus as claimed in claim 8, wherein said
25 pointer bits include new data flag (NDF) bits and said message is embedded in one or more of said new data flag (NDF) bits.

10. In a synchronous transmission apparatus for use in a
synchronous transmission network in which data signals are
carried on transmission paths, the data signals being
arranged in container units which are arranged in data
5 frames, each container unit being associated with
respective pointer bits which indicate the position of the
container unit within a respective data frame, the
apparatus including two data ports, one of said data ports
being arranged to receive a first data signal on a
10 respective data path, the other data port being arranged
to receive a second data signal on a respective data path,
said one data port being arranged to communicate said
first data signal to said other data port, said other data
port being arranged to communicate said second data signal
15 to said one data port, a message signalling method
comprising

embedding, at said other data port, a message relating to
said first data signal in one or more pointer bits
20 associated with the path of said second data signal;

examining, at said one data port, said one or more pointer
bits to determine said message.

25 11. A method as claimed in claim 10, wherein said pointer
bits include new data flag (NDF) bits, the method
including embedding said message in one or more of said
new data flag (NDF) bits.

12. A synchronous transmission apparatus for use in a
synchronous transmission network in which data signals are
carried on transmission paths, the data signals being
arranged in container units which are arranged in data
5 frames, each container unit being associated with
respective pointer bits which indicate the position of the
container unit within a respective data frame, the pointer
bits including new data flag (NDF) bits, the apparatus
comprising two or more data ports and being arranged to
10 communicate data signals between data ports on respective
transmission paths, wherein in order to signal a message
between data ports, the apparatus is arranged to embed
said message in one or more of said new data flag (NDF)
bits associated with the transmission path of a data
15 signal being communicated between said data ports.

13. In a synchronous transmission apparatus for use in a
synchronous transmission network in which data signals are
carried on transmission paths, the data signals being
20 arranged in container units which are arranged in data
frames, each container unit being associated with
respective pointer bits which indicate the position of the
container unit within a respective data frame, the pointer
bits including new data flag (NDF) bits, the apparatus
25 comprising two or more data ports and being arranged to
communicate data signals between data ports on respective
transmission paths, a message signalling method comprising

embedding a message in one or more of said new data flag (NDF) bits associated with the transmission path of a data signal being communicated between said data ports.